

ProjectX Linac with HWR1 and SSR1 at 5 mA
“02-JUNE-11 Baseline Lattice” with 9HWR1+ ”standard” SSR1

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FNAL

Sept 2nd 2011

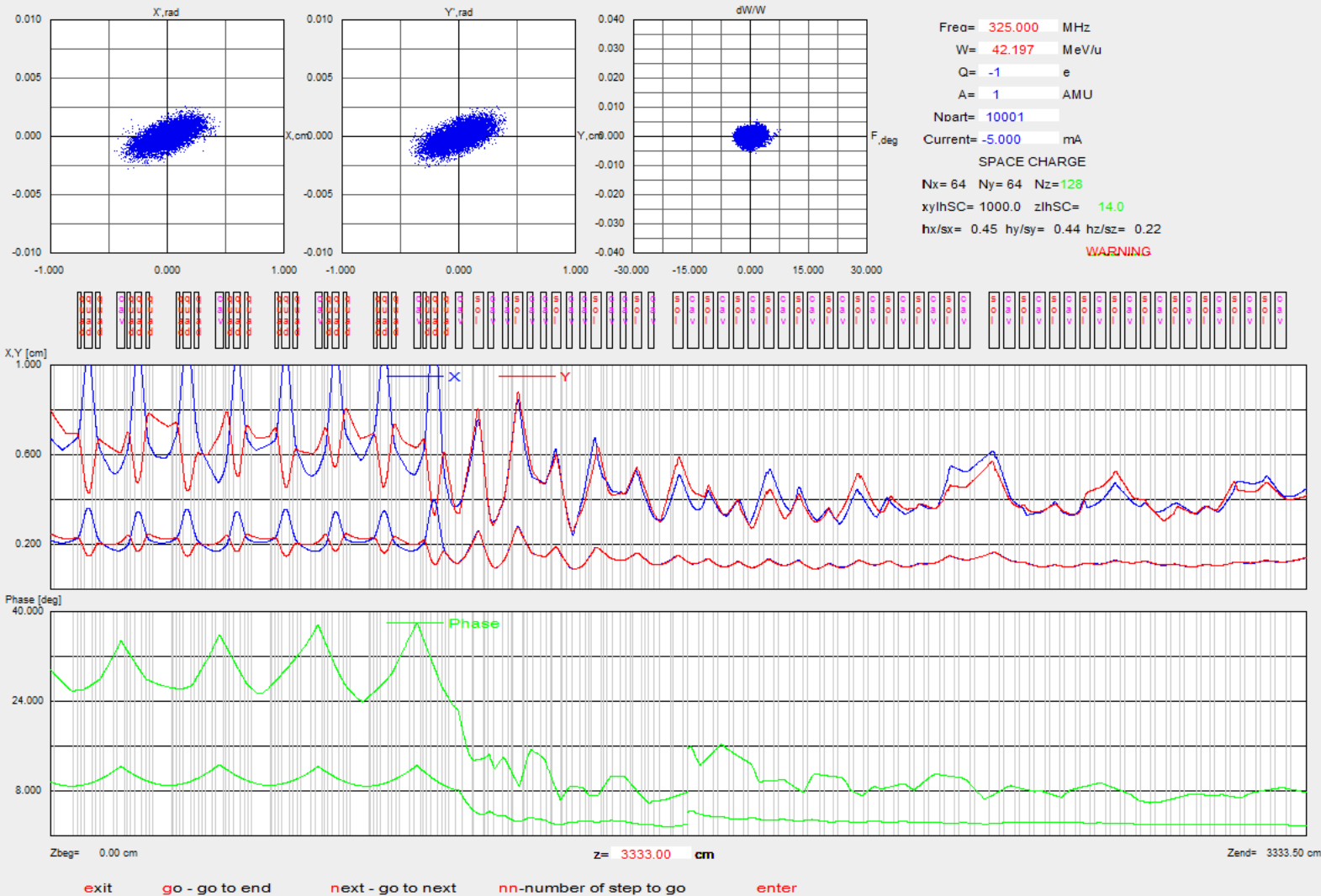
TRACK simulations: MEBT + HWR1+SSR1

Bunch : 162.5 MHz @ 5 mA

FNAL: 162.5 MHz BUNCHERS + HWR

Sep 02, 2011, 10:04:30

Sep 02, 2011, 10:19:24



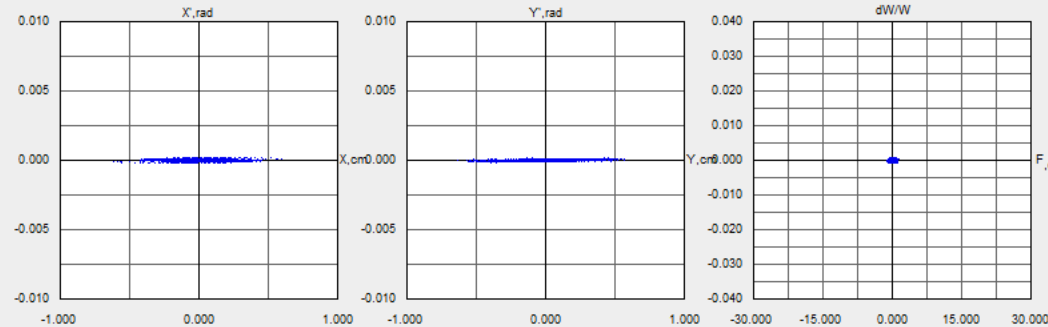
TRACK simulations: MEBT + HWR1+SSR1+... (up to 3GeV)

Bunch : 162.5 MHz @ 5 mA

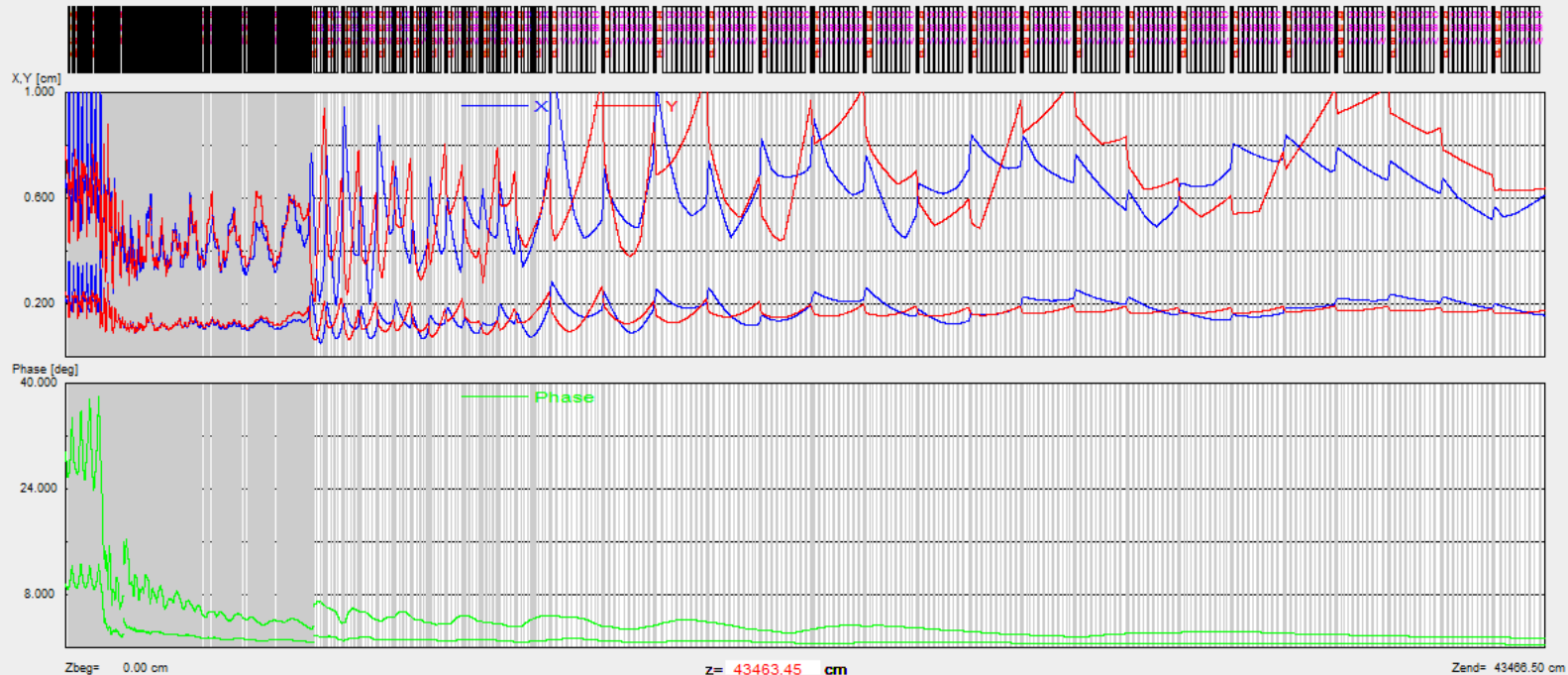
FNAL: 162.5 MHz BUNCHERS + HWR

Aug 31,2011,10:31:32

Aug 31,2011,11:24:46



Freq= 650.000 MHz
W= 3037.191 MeV/u
Q= -1 e
A= 1 AMU
Noart= 10001
Current= -5.000 mA
SPACE CHARGE
Nx= 64 Ny= 64 Nz=128
xylhSC= 1000.0 zlhSC= 14.0
hx/sx= 1.00 hy/sy= 0.89 hz/sz= 0.22
WARNING

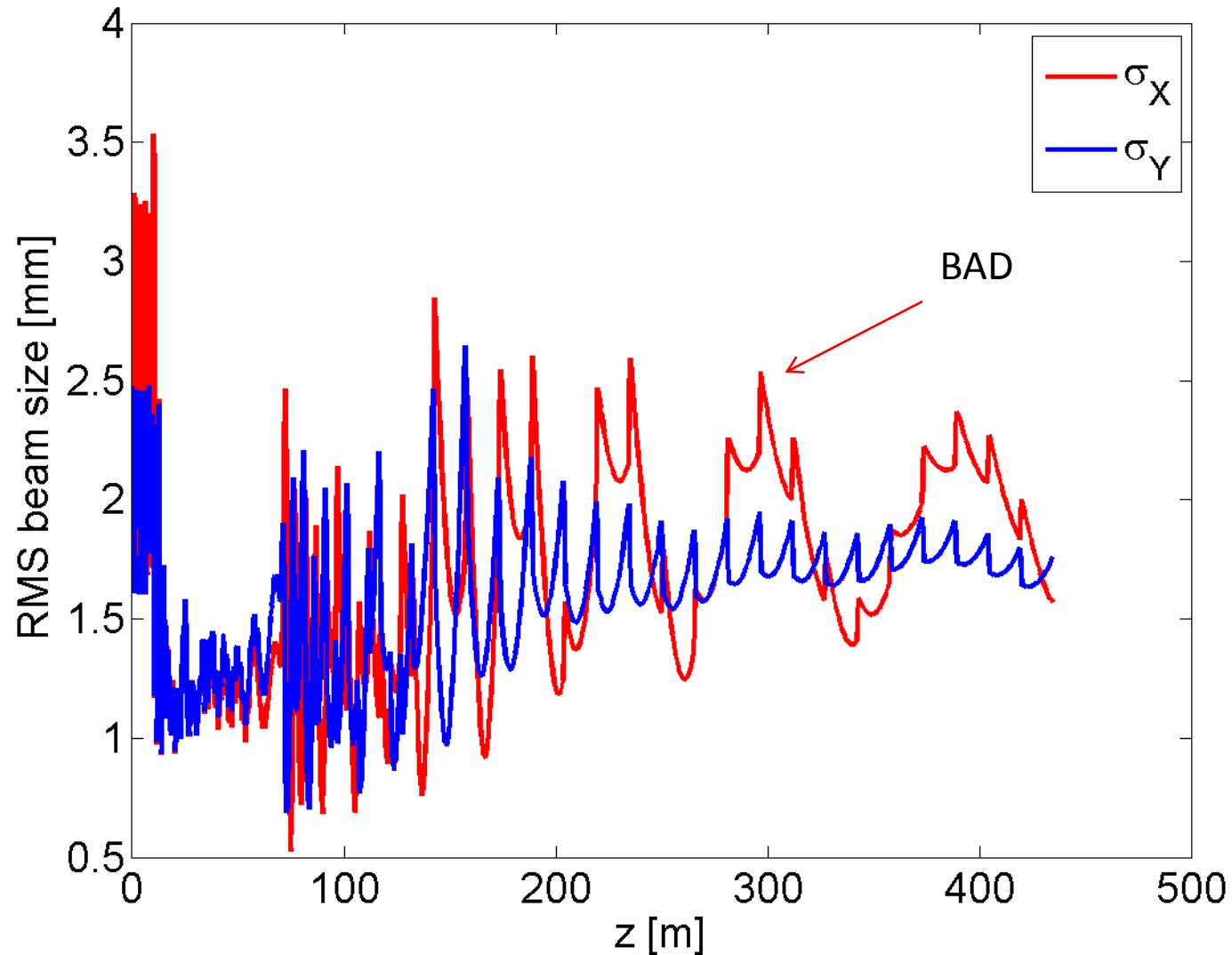


exit go - go to end next - go to next nn-number of step to go enter

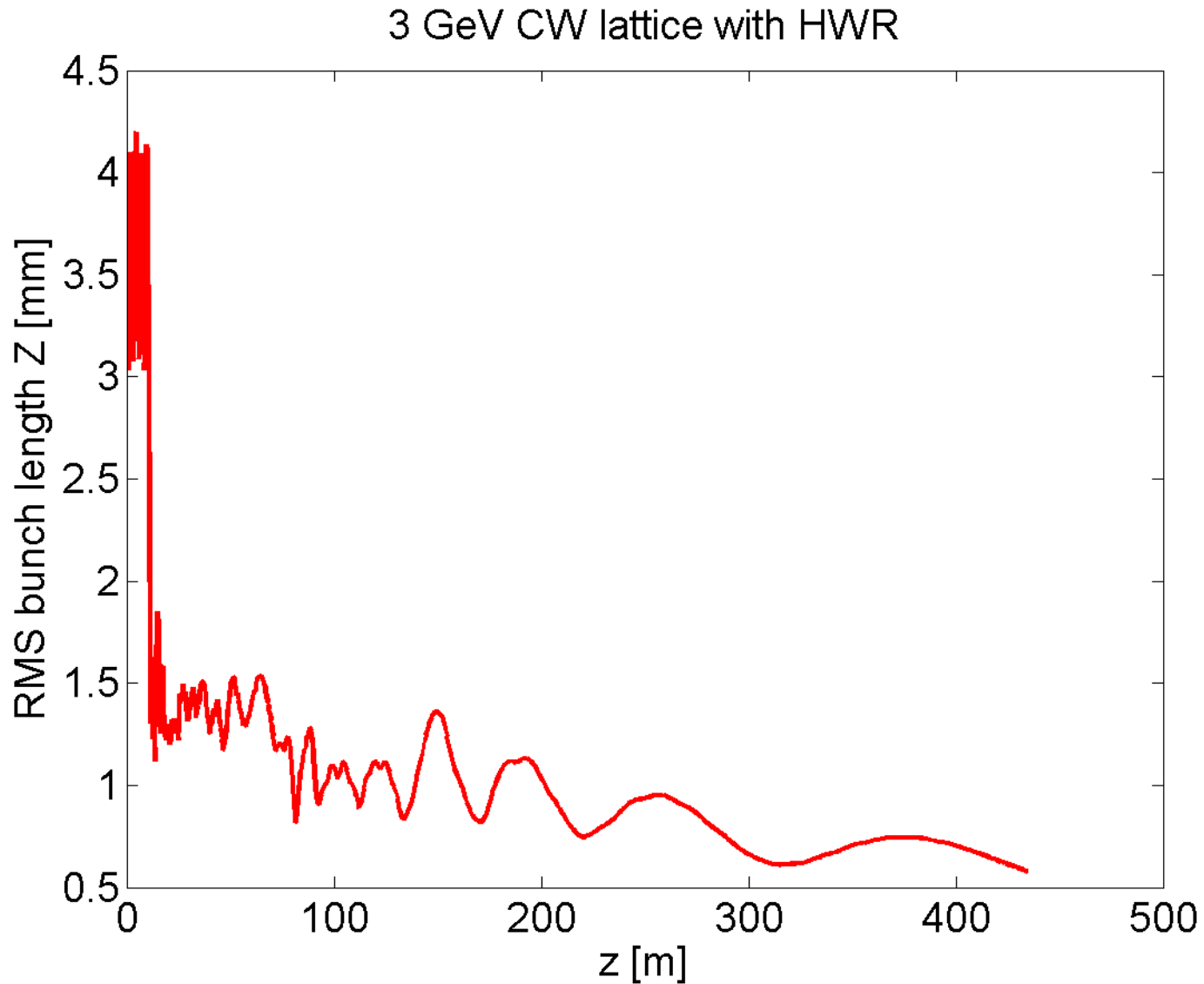
TRACK simulations: MEBT + HWR1+SSR1

Bunch : 162.5 MHz @ 5 mA

3 GeV CW lattice with HWR



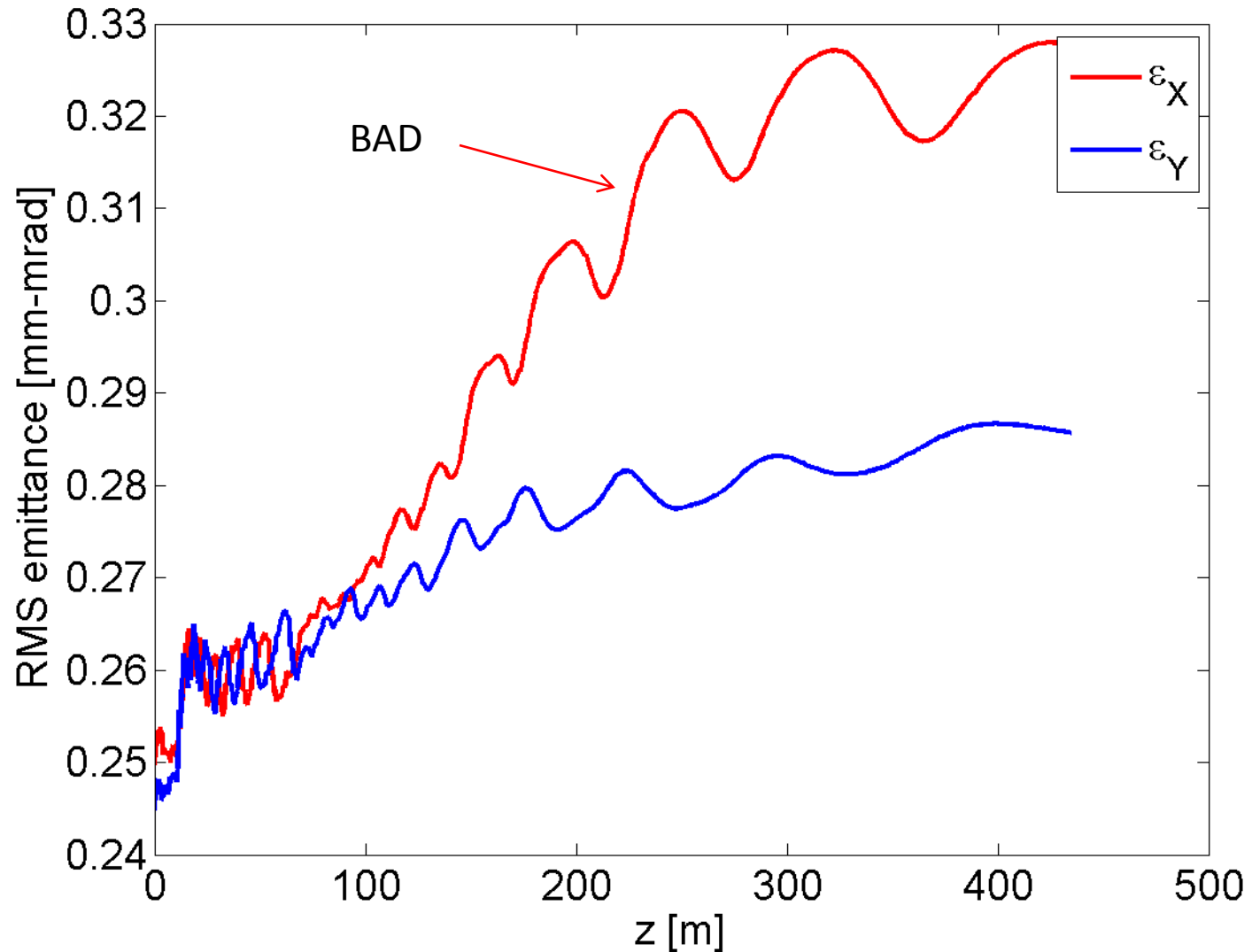
TRACK simulations: MEBT + HWR1+SSR1
Bunch : 162.5 MHz @ 5 mA



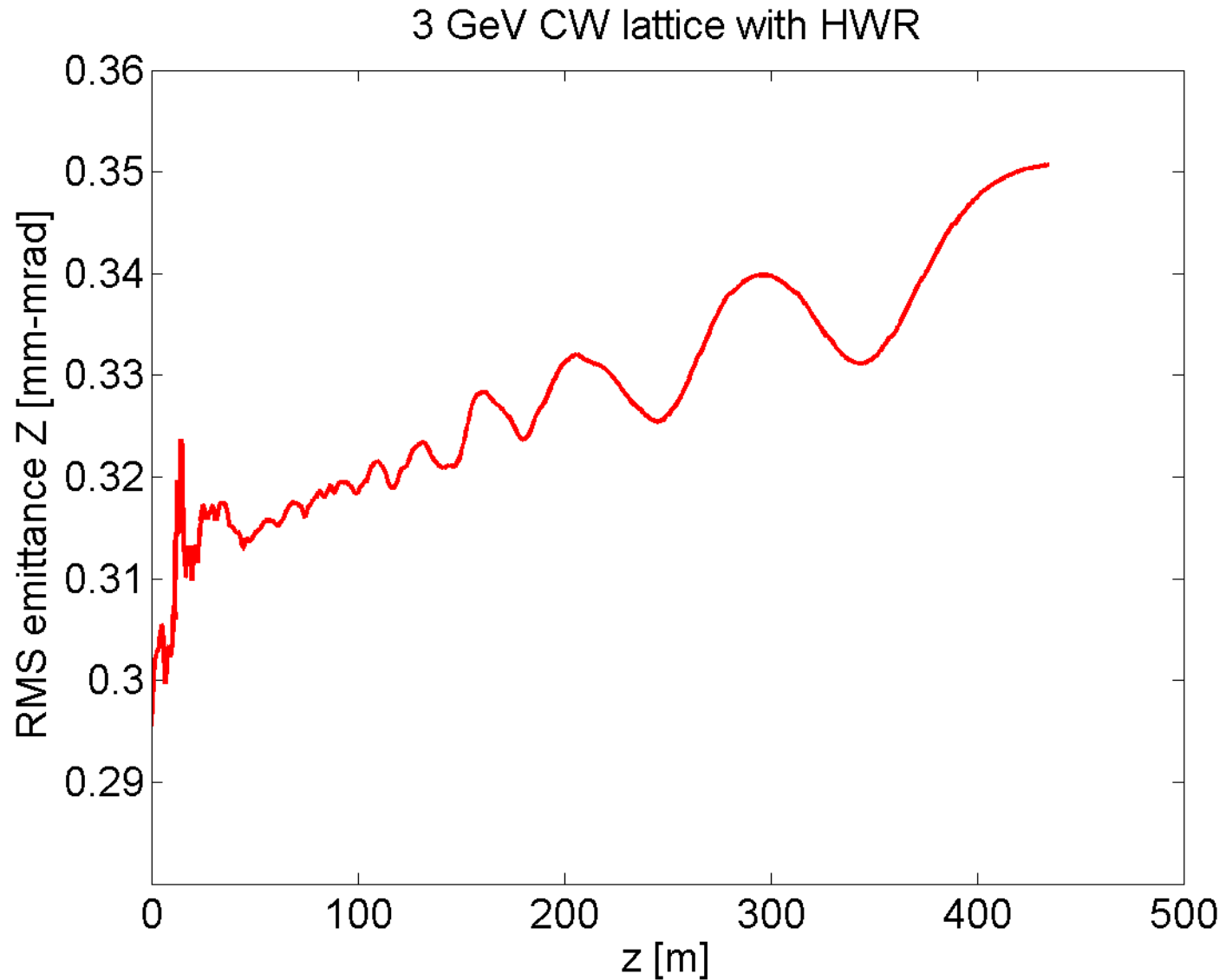
TRACK simulations: MEBT + HWR1+SSR1

Bunch : 162.5 MHz @ 5 mA

3 GeV CW lattice with HWR



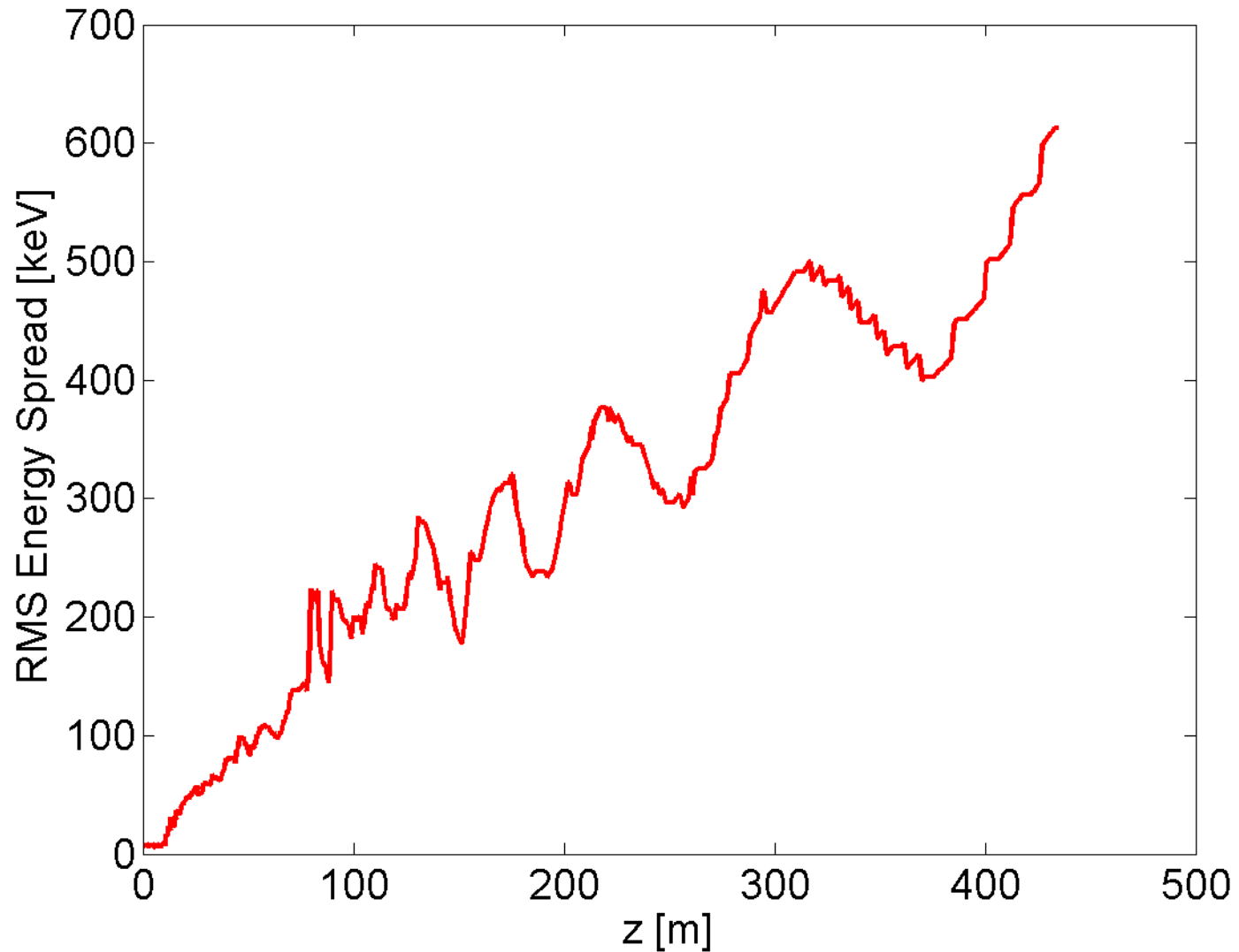
TRACK simulations: MEBT + HWR1+SSR1
Bunch : 162.5 MHz @ 5 mA



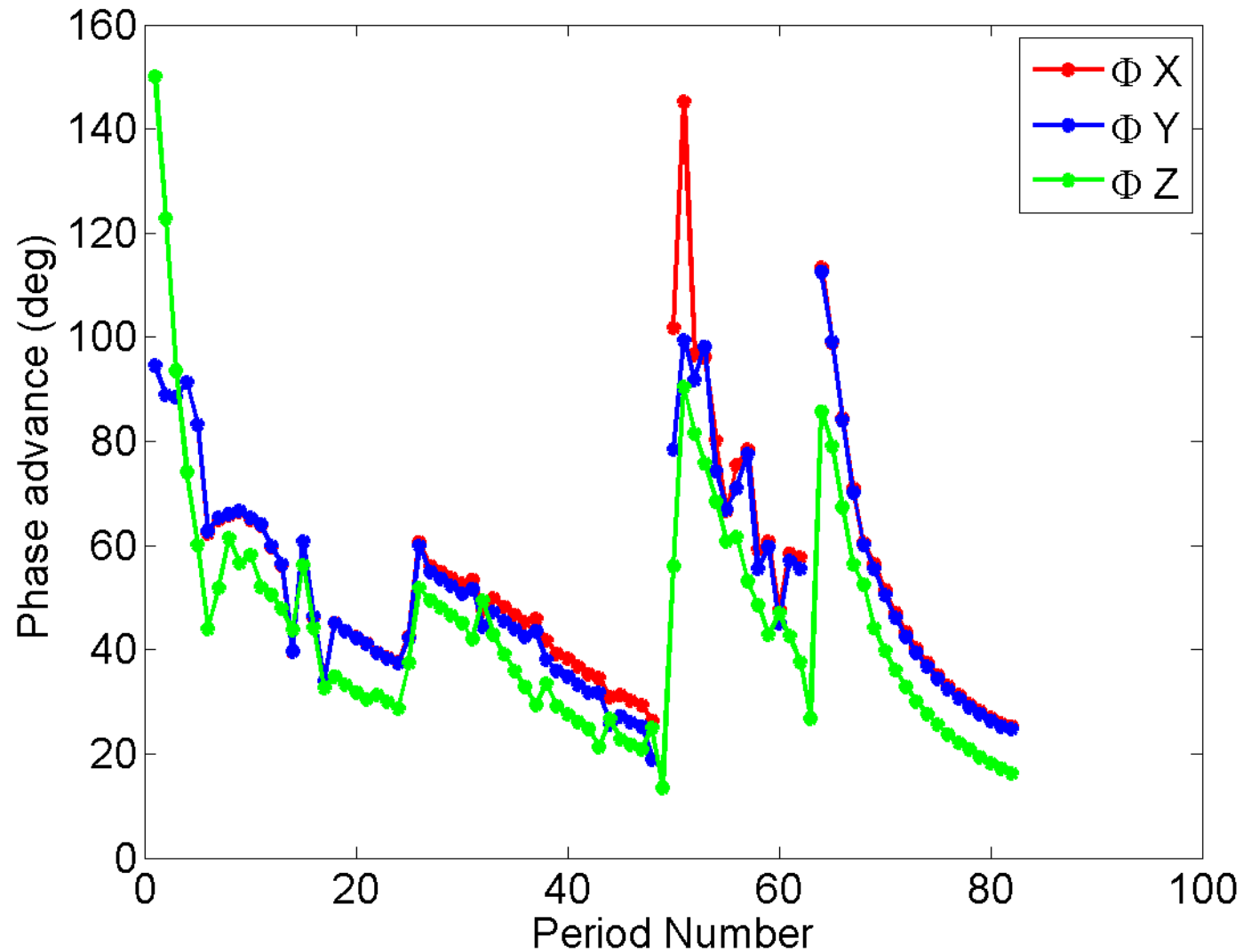
TRACK simulations: MEBT + HWR1+SSR1

Bunch : 162.5 MHz @ 5 mA

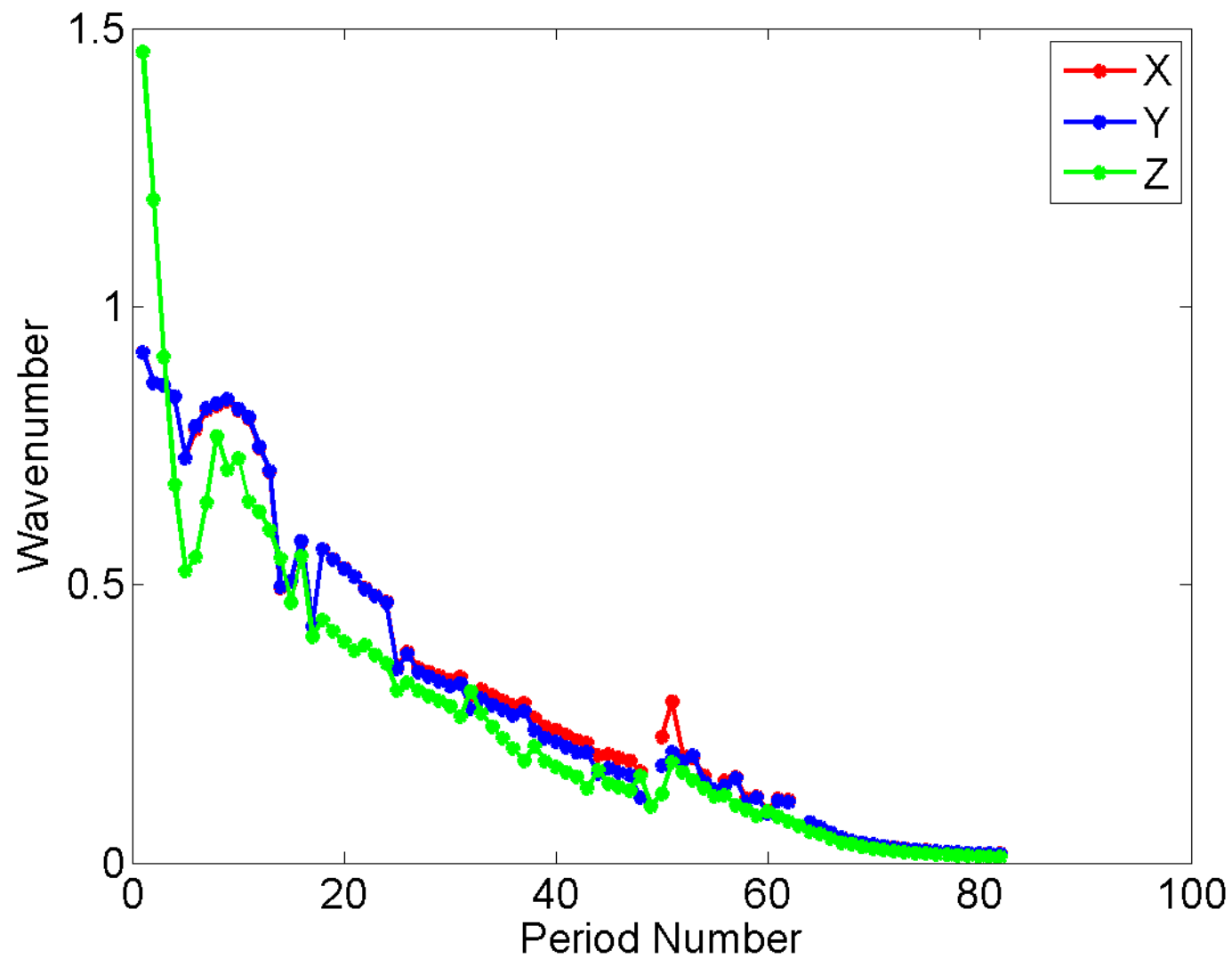
3 GeV CW lattice with HWR



TRACK simulations: MEBT + HWR1+SSR1
Bunch : 162.5 MHz @ 5 mA

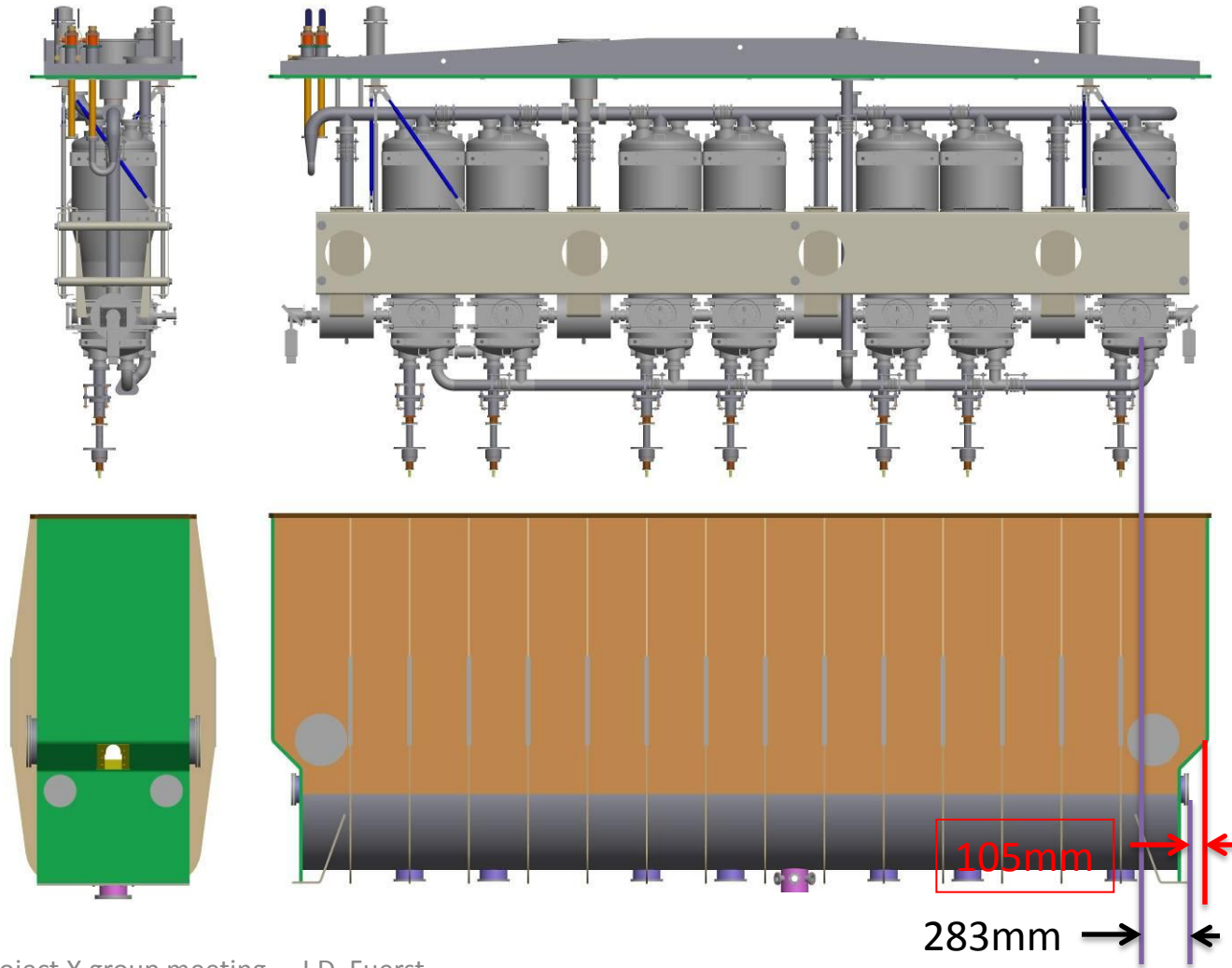


TRACK simulations: MEBT + HWR1+SSR1



Actual space middle 9th HWR1 to middle 1st Sol SSR1 = 79.5 cm

- 205" long
- 44.5" box width
- 36" lid width
- 80.5" box height
- (min. clearance: 84.5" X 48")
- 103" OAL height
- String: ~3500lb
- lid+string: 5800lb
- Box/magshield/thermal shield: ~6000lb



Some Other Studies we did with HWR1 *en lieu of* SSR1

- Turning off first HWR1 still OK (with 8 remaining HWR1)
- Turning off last HWR1 still OK. But space cannot be much > 79.5 cm
- 50 cm additional space possible between HWR1 and SSR1 cryomodule still OK (with 9 HWR1 working)
- 7 HWR still OK with 1S2C in SSR1 (at 5 mA...)